

CLAIMS

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c) > 1. A computer implemented method of reducing sinusoidal artifact
generation in a vocoder, said computer implemented method comprising the
5 steps of:

a) receiving a determined input energy threshold value below which a
suspected noise-inducing codebook excitation vector is expected to be
generated by said vocoder; and

b) provided an input signal is received having an energy value lower
10 than said input energy threshold value, using a selection process to prevent
said suspected noise-inducing codebook excitation vector from being
continuously generated.

2. The computer implemented method of reducing sinusoidal artifact
15 generation in a vocoder as recited in Claim 1 wherein step a) comprises:
receiving said determined input energy threshold value having a
value of approximately $4q^2$.

3. The computer implemented method of reducing sinusoidal artifact
20 generation in a vocoder as recited in Claim 1 wherein step b) comprises:
b1) calculating a sum of squares value for said input signal; and
b2) provided said sum of squares value for said input signal is less
than said input energy threshold value and provided that a candidate
codebook index equals 1, performing a randomization codebook excitation
25 vector selection process such that said suspected noise-inducing codebook
excitation vector is prevented from being continuously generated.

4. The computer implemented method of reducing sinusoidal artifact generation in a vocoder as recited in Claim 1 wherein step b) comprises:

b1) calculating a sum of squares value for said input signal; and

b2) provided said sum of squares value for said input signal is less than said input energy threshold value and provided that a candidate codebook index does not equal 1, utilizing said suspected noise-inducing codebook excitation vector.

5. In a computer system having a processor coupled to a bus, a computer readable memory unit coupled to said bus and having stored therein a computer program that when executed by said processor causes said computer system to implement a method of reducing sinusoidal artifact generation in a vocoder, said method comprising the steps of:

a) receiving a determined input energy threshold value below which a suspected noise-inducing codebook excitation vector is expected to be generated by said vocoder; and

b) provided an input signal is received having an energy value lower than said input energy threshold value, using a selection process to prevent said suspected noise-inducing codebook excitation vector from being continuously generated.

6. The computer readable memory unit as described in Claim 5 wherein said computer program stored therein when executed by said processor causes said computer system performing said step a) to further perform the step of:

receiving said determined input energy threshold value having a value of approximately $4 q^2$.

7. The computer readable memory unit as described in Claim 5 wherein said computer program stored therein when executed by said processor causes said computer system performing said step b) to further perform the steps of:

- 5 b1) calculating a sum of squares value for said input signal; and
 b2) provided said sum of squares value for said input signal is less
 than said input energy threshold value and provided that a candidate
 codebook index equals 1, performing a randomization codebook excitation
 10 vector selection process such that said suspected noise-inducing codebook
 excitation vector is prevented from being continuously generated.

8. The computer readable memory unit as described in Claim 5 wherein said computer program stored therein when executed by said
 15 processor causes said computer system performing said step b) to further
 perform the step of:

- b1) calculating a sum of squares value for said input signal; and
 b2) provided said sum of squares value for said input signal is less
 than said input energy threshold value and provided that a candidate
 20 codebook index does not equal 1, utilizing said suspected noise-inducing
 codebook excitation vector.

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9. A computer system comprising:
 a processor;
 25 an address/data bus coupled to said processor;

a computer readable memory coupled to communicate with said processor, said processor for performing the vocoder sinusoidal artifact generation reduction steps of:

5 a) receiving a determined input energy threshold value below which a suspected noise-inducing codebook excitation vector is expected to be generated by said vocoder; and

b) provided an input signal is received having an energy value lower than said input energy threshold value, using a selection process to prevent said suspected noise-inducing codebook excitation vector from being
10 continuously generated.

10. The computer system as recited in Claim 9 wherein at said step a) said processor performs the vocoder sinusoidal artifact generation reduction steps of:

15 receiving said determined input energy threshold value having a value of approximately $4q^2$.

11. The computer system as recited in Claim 9 wherein at said step b) said processor performs the vocoder sinusoidal artifact generation

20 reduction steps of:

b1) calculating a sum of squares value for said input signal; and

b2) provided said sum of squares value for said input signal is less than said input energy threshold value and provided that a candidate codebook index equals 1, performing a randomization codebook excitation
25 vector selection process such that said suspected noise-inducing codebook excitation vector is prevented from being continuously generated.

12. The computer system as recited in Claim 9 wherein at said step b) said processor performs the vocoder sinusoidal artifact generation reduction steps of:

b1) calculating a sum of squares value for said input signal; and

b2) provided said sum of squares value for said input signal is less than said input energy threshold value and provided that a candidate codebook index does not equal 1, utilizing said suspected noise-inducing codebook excitation vector.

13. A method of reducing sinusoidal artifact generation in a vocoder, said method comprising the steps of:

a) determining an input energy threshold value below which a suspected noise-inducing codebook excitation vector is expected to be generated by said vocoder; and

b) provided an input signal is received having an energy value lower than said input energy threshold value, using a selection process to prevent said suspected noise-inducing codebook excitation vector from being continuously generated.

14. The method of reducing sinusoidal artifact generation in a vocoder as recited in Claim 13 wherein step a) comprises:

determining said input energy threshold value to be approximately $4q^2$.

15. The method of reducing sinusoidal artifact generation in a vocoder as recited in Claim 13 wherein step b) comprises:

b1) calculating a sum of squares value for said input signal; and

b2) provided said sum of squares value for said input signal is less than said input energy threshold value and provided that a candidate codebook index equals 1, performing a randomization codebook excitation vector selection process such that said suspected noise-inducing codebook excitation vector is prevented from being continuously generated.

16. The method of reducing sinusoidal artifact generation in a vocoder as recited in Claim 13 wherein step b) comprises:

- b1) calculating a sum of squares value for said input signal; and
- 10 b2) provided said sum of squares value for said input signal is less than said input energy threshold value and provided that a candidate codebook index does not equal 1, utilizing said suspected noise-inducing codebook excitation vector.